Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE BOTANICAL GAZETTE

THE UNIVERSITY OF CHICAGO PRESS
CHICAGO, ILLINOIS

THE CAMBRIDGE UNIVERSITY PRESS
LONDON

THE MARUZEN-KABUSHIKI-KAISHA
TOKYO, OSAKA, KYOTO, FUKUOKA, SENDAI

THE MISSION BOOK COMPANY
SHANGHAI

THE
BOTANICAL GAZETTE

EDITOR
JOHN MERLE COULTER

VOLUME LXXII

JULY–DECEMBER 1921

WITH SIXTEEN PLATES AND NINETY-TWO FIGURES

THE UNIVERSITY OF CHICAGO PRESS
CHICAGO, ILLINOIS

Published
July, August, September, October, November, December, 1921

Composed and Printed By
The University of Chicago Press
Chicago, Illinois, U.S.A.

TABLE OF CONTENTS

		PAGE
Respiration of dormant seeds. Contributions from the Hull Botanical Laboratory 282 (with four figures)	*Hope Sherman*	1
Leaves of the Helobieae (with plate I)	*Agnes Arber*	31
Notes on new or rare species of rusts	*W. H. Long*	39
Peat deposits and their evidence of climatic changes (with twelve figures)	*A. P. Dachnowski*	57
Life history of *Corallina officinalis* var. *mediterranea*	*S. Yamanouchi*	90
Intra-ovarial fruits in *Carica Papaya* (with six figures)	*H. F. Bergman*	97
Leaves of certain Amaryllids (with eight figures)	*Agnes Arber*	102
A homosporous American *Lepidostrobus*. Contributions from the Hull Botanical Laboratory 283	*John M. Coulter* and *W. J. G. Land*	106
Effect of direct current on cells of root tip of Canada field pea (with plates II, III, and three figures)	*Henry F. A. Meier*	113
Chemistry of after-ripening, germination, and seedling development of juniper seeds. Contributions from the Hull Botanical Laboratory 284	*Dean A. Pack*	139
Leaf-tissue production and water content in a mutant race of *Phaseolus vulgaris*	*J. Arthur Harris*	151
Technique in contrasting mucors (with two figures)	*Albert F. Blakeslee*, *Donald S. Welch*, and *J. Lincoln Cartledge*	162
Germination of aeciospores, urediniospores, and teliospores of *Puccinia coronata*	*G. R. Hoerner*	173
Sexual dimorphism in *Cunninghamella* (with one figure)	*Albert F. Blakeslee*, *J. Lincoln Cartledge*, and *Donald S. Welch*	185
Notes on willows of sections Pentandrae and Nigrae (with four figures)	*Carleton R. Ball*	220

PAGE

Polypodium vulgare as an epiphyte (with three figures) - - - - - - - - - - - - - *Duncan S. Johnson* 237

Chromosomes of *Conocephalum conicum* (with plates IV, V) - - - - - - - - - - - - *Amos M. Showalter* 245

Peach yellows and little peach (with plates VI, VII) *Mel. T. Cook* 250

Effect of location of seed upon germination- - - *Edward N. Munns* 256

Decay of Brazil nuts (with plates VIII-XII and three figures) - - - - - - - - - - - *Edwin Rollin Spencer* 265

Growth rings in a monocotyl. Contributions from the Hull Botanical Laboratory 285 (with sixteen figures) - - - - - - - - - - - - *C. J. Chamberlain* 293

Invasion of virgin soil in the tropics (with two figures) - - - - - - - - - - - - - *Duncan S. Johnson* 305

Pectic material in root hairs. Contributions from the Hull Botanical Laboratory 286 - - - *Caroline G. Howe* 313

Destruction of mosses by lichens. Contributions from the Hull Botanical Laboratory 287 (with plate XIII) - - - - - - - - - - - - *Frank P. McWhorter* 321

Annual rings of growth in carboniferous wood (with plate XIV) - - - - - - - - - - - - *Winifred Goldring* 326

Optimum temperatures for flower seed germination (with ten figures) - - - - - - - - - - *Geo. T. Harrington* 337

Subterranean organs of bog plants. Contributions from the Hull Botanical Laboratory 288 (with eleven figures) - - - - - - - - - - - *Fred W. Emerson* 359

Morphological study of *Carya alba* and *Juglans nigra* (with plates XV, XVI, and one figure) - *Theo. Holm* 375

Phylogenetic position of the bacteria - - - - *Hilda Hempl Heller* 390

Odontopteris genuina in Rhode Island (with five figures) - - - - - - - - - - - - - *Eda M. Round* 397

BRIEFER ARTICLES—

Helmut Bruchmann (with portrait) - - - - - *C. J. Chamberlain* 45

Root development of wheat seedlings (with one figure) - - - - - - - - - - - - - *W. F. Gericke* 404

PAGE

CURRENT LITERATURE - - - - - - - - 48, 109, 178, 261, 331, 407

For titles of book reviews see index under author's name and reviews

Papers noticed in "Notes for Students" are indexed under author's name and subjects

---

DATES OF PUBLICATION

No. 1, July 16; No. 2, August 15; No. 3, September 15; No. 4, October 15; No. 5, November 15; No. 6, December 15.

ERRATA

VOL. LXXI

P. 422, line 14, for microchemical read macrochemical

VOL. LXXII

P. 305, footnote, for no. 70 read no. 71

P. 314, line 7 from bottom, also in headings of tables I and III, for ruthenian read ruthenium

P. 318, table II under radish test for callose in sand, for Layer at tip read Same as in loam